5.16.61 RAVELING TEST ON RECYCLED ASPHALT SPECIMENS (Kansas Test Method KT-61)

a. SCOPE

This method covers the procedure for performing the Raveling Test on recycled asphalt.

b. REFERENCED DOCUMENTS

b.1. KT-58; Method for Preparing and Determining the Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyratory Compactor

b.2. International Slurry Surfacing Association ISSA TB-100: Wet Track Abrasion of Slurry Seals

c. APPARATUS

c.1. The apparatus used for the raveling test is a modified A-120 Hobart mixer and abrasion head (including hose) used in the Wet Track Abrasion of Slurry Seals Test (ISSA TB-100). The rotation speed for the raveling test is not modified from ISSA TB-100. The ring mass is removed from the abrasion head for the raveling test below. The mass of the abrasion head and hose in contact with the specimen should be 600 ± 15 g. The prepared sample must be able to be secured under the abrasion head, and centered for accurate result, allowing for free movement vertically of the abrasion head. The device used for securing and centering the sample must allow a minimum of 10 mm of the sample to be available for abrasion. The Hobart mixer will need to be modified to allow the sample to fit properly for abrasion. The modification may be accomplished by adjusting the abrasion head height, or the height of the secured sample. A Raveling Test Adapter can be purchased through Precision Machine and Welding, Salina, KS, (785) 823-8760. Please reference the Hobart Model number A-120 when ordering. The C-100 and N-50 Models are not acceptable for this test procedure due to differences in size and speed of rotation.

d. PROCEDURE

d.1. Split out two recycled asphalt samples from the medium gradation, or field sample[1], to a quantity of 2700 g in mass. The 2700 g is an approximate mass to give 70 ± 5 mm of height after compaction.

d.2. The recycled asphalt sample should be placed in a container of adequate size for mixing.

d.3. Field or design moisture contents should be added to each of the recycled asphalt samples and mixed for 60 seconds.

d.4. The design emulsion content shall be added to each of the recycled asphalt samples and mixed for 60 seconds.

d.5. The samples shall be placed immediately into a 150 mm gyratory compaction mold and compacted to 20 gyrations. If the sample height is not 70 ± 5 mm, the recycled asphalt mass should be adjusted.

[1] If field samples are taken, Steps d.2, d.3, and d.4 shall be omitted.

d.6. After compaction, the samples shall be removed from the compaction mold and placed on a flat pan to cure at ambient lab temperature (18-24^{o}C) for 4 hours ± 5 minutes.

d.7. The specimens shall be weighed after the curing, just prior to testing.

d.8. The specimens shall be placed on the raveling test apparatus. Care should be taken that the specimen is centered and well supported. The area of the hose in contact with the specimen should not have been previously used. It is allowable to rotate the hose to an unworn section for testing. The abrasion head (with hose) shall be free to move vertically downward a minimum of 5 mm if abrasion allows.

d.9. The samples shall be abraded for 15 minutes and immediately weighed.

e. CALCULATION

e.1. The % Raveling loss shall be determined as follows:

[(mass prior to test – mass after abrasion) / mass prior to test] * 100

f. REPORT

f.1. The average of the two specimens shall be reported as the % Raveling loss.

f.1.a. There should not be a difference of 0.5% Raveling loss between the two test specimens for proper precision. A difference of >0.5% will require the test to be repeated. If both of the samples have a Raveling loss of >10% the numbers shall be averaged and the precision rule will be waived.